

# Mechanism for Transferring Data from Signal Processor Internal to Rotating Spherical Receiver Module (RSRM) to Primary Signal Processor External to Antenna Apparatus via Optically Transparent Metamaterial Antenna (Supplement to 26 January 2024 #1)

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## **Introduction**

Although highly effective for preventing the jamming of data links to airborne drone and other platforms, the RSRM mechanism described in 26 January 2024 #1 requires a supplementary mechanism in order to have viability not described in that publication.

## **Abstract**

It is possible to construct the RSRM mechanism for detecting and differentiating radio signals according to their direction of origin using optically transparent materials. In fact, it is necessary to construct the mechanism from optically transparent materials as one would need to have some means of getting the partially digested signals received out of the enclosed spherical antenna mechanism and into the primary processor, located within a shielded part of the chassis of the drone.

The most logical method for achieving this would be to translate received signals from each of millions of channels (each channel corresponding to a different microscopic sub-section of the surface of the sphere) into visible light. An optical emitter would be driven by a co-processor capable of the simple translation of raw data into pulses of visible light of a particular frequency. Light of a different frequency would be generated by a different LED emitter with one emitter corresponding uniquely to each of the channels, which uniquely correspond to a particular spatial area of the spherical metamaterial antenna.

The direction of optical emission would be omnidirectional. An optical receiver which is hard-wired into the primary signal processor within the chassis of the plane would interpret the data associated with what amount to millions of microscopic antennae and the primary signal processor would logically dither the data according to its channel.

## **Conclusion**

So long as a spherical metamaterial antenna can be made to rotate at a predictable rate within a fluid cushion, so long as a modest co-processor and specialized LED emitter can be fitted within the center of this sphere (with careful attention paid to how this would affect the weight balance of the sphere)

and so long as this sphere can be composed of optically transparent materials, the mechanism described in 26 January 2024 #1 would indeed be viable.